

Title (en)

MEMS MIRROR ASSEMBLY AND METHOD FOR PRODUCING A MEMS MIRROR ASSEMBLY

Title (de)

MEMS SPIEGELANORDNUNG UND VERFAHREN ZUR HERSTELLUNG EINER MEMS SPIEGELANORDNUNG

Title (fr)

SYSTÈME DE MIROIR MEMS ET PROCÉDÉ DE FABRICATION D'UN SYSTÈME DE MIROIR MEMS

Publication

EP 3658974 A1 20200603 (DE)

Application

EP 18750365 A 20180725

Priority

- DE 102017213070 A 20170728
- EP 2018070215 W 20180725

Abstract (en)

[origin: WO2019020708A1] The invention relates to a MEMS mirror assembly for detecting a large angular range up to 180°, preferably up to 160°, and to a method for producing a MEMS mirror assembly. The mirror assembly comprises a carrier substrate (1), on which a mirror (2) vibrating about at least one axis is mounted, a transparent cover (4), which is connected in a hermetically sealed manner to the carrier substrate (1) and which comprises an ellipsoidal dome (6) having a substantially round base area, and a compensation optical system (8), which is arranged in a predefined beam path for an incident beam outside the dome (6). The middle of the mirror (2) lies in the centre point of the dome, and the compensation optical system (8) collimates the incident beam in such a way that a divergence or convergence of the beam caused by the boundary surfaces of the dome once said beam has exited from the dome (6) is substantially compensated. The MEMS mirror assemblies are produced by joining a cover wafer and a mirror wafer, which each comprise a plurality of hemispherical domes and mirrors mounted on the carrier substrate. The mirror assemblies are then separated from the joined wafers. The domes of the cover wafer are produced by a glass flow process.

IPC 8 full level

G02B 26/08 (2006.01); **B81B 7/00** (2006.01)

CPC (source: EP IL KR US)

B81B 7/0067 (2013.01 - EP IL KR US); **B81C 1/00317** (2013.01 - IL US); **G02B 26/0833** (2013.01 - EP IL KR US); **G02B 26/10** (2013.01 - IL); **G02B 26/105** (2013.01 - IL); **B81B 2201/042** (2013.01 - EP IL KR US); **B81C 2203/0109** (2013.01 - IL US); **G02B 26/10** (2013.01 - US); **G02B 26/105** (2013.01 - US)

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)

BA ME

DOCDB simple family (publication)

WO 2019020708 A1 20190131; CN 110959130 A 20200403; CN 110959130 B 20220816; DE 102017213070 A1 20190131; EP 3658974 A1 20200603; EP 3658974 B1 20221019; IL 272020 A 20200227; IL 272020 B1 20231001; IL 272020 B2 20240201; JP 2020528582 A 20200924; KR 20200031106 A 20200323; US 11531196 B2 20221220; US 2020159006 A1 20200521

DOCDB simple family (application)

EP 2018070215 W 20180725; CN 201880049871 A 20180725; DE 102017213070 A 20170728; EP 18750365 A 20180725; IL 272020 A 20200113; JP 2020504212 A 20180725; KR 20207001980 A 20180725; US 201816634420 A 20180725